

Listing of Claims:

Claims 1-25 (canceled)

Claim 26 (New): A method for assaying a sample for the presence of a target molecule comprising:

 providing said sample suspended in a liquid wherein said sample is suspected of comprising said target molecule;

 immersing a filter into said liquid containing said sample and pulling said liquid containing said sample transversely through said filter using a pressure-controlling apparatus connected to said filter, wherein said filter comprises a sensor molecule attached thereto and said sensor molecule is capable of specifically binding to said target molecule, if present;

 binding of said target molecule to said sensor molecule;

 removing said filter from said sample;

 detecting the presence of said target molecule specifically bound to said sensor molecule.

Claim 27 (new): The method of claim 26, wherein said sample is selected from the group consisting of blood; urine; semen; milk; sputum; mucus; plueral fluid; pelvic fluid, sinovial fluid; ascites fluid; a body cavity wash; eye brushing; skin scrapings; a buccal swab; a vaginal swab; a pap smear; a rectal swab; an aspirate; a needle biopsy; a section of tissue;

plasma; serum; spinal fluid; lymph fluid; an external secretion of the skin, respiratory, intestinal, or genitourinary tract; tears; saliva; a tumor; an organ; a microbial culture; and an in vitro cell culture constituent.

Claim 28 (new): The method of claim 26, wherein the sensor molecule comprises an antibody.

Claims 29 (new): The method of claim 26, wherein the sensor molecule comprises a polynucleotide.

Claims 30 (new): The method of claim 26, wherein the sensor molecule comprises a peptide nucleic acid.

Claim 31 (new): The method of claim 26, wherein a plurality of different sensor molecules is attached to the filter, wherein each of said plurality can selectively bind to a corresponding different target molecule.

Claim 32 (new): The method of claim 26, wherein said target molecule is a cell surface molecule.

Claim 33 (new): The method of claim 26, wherein said target molecule is a cell surface molecule.

Claim 34 (new): The method of claim 26, wherein said target molecule is a soluble molecule.

Claim 35 (new): The method of claim 26, wherein said target molecule is membrane-bound.

Claim 36 (new): The method of claim 26, wherein said target molecule is comprised of DNA.

Claim 37 (new): The method of claim 26, wherein said target molecule is comprised of RNA.

Claim 38 (new): The method of claim 26, wherein said target molecule is from a pathological organism.

Claim 39 (new): The method of claim 26, wherein said target molecule is a viral marker.

Claim 40 (new): The method of claim 26, further comprising comparing a result from said determining to a result obtained from a control sample.

Claim 41 (new): The method of claim 40, where said control sample is a positive control.

Claim 42 (new): The method of claim 40, where said control sample is a negative control.

Claim 43 (new): The method of claim 26, further comprising washing said filter to remove non-specifically bound molecules from the said sensor molecule prior to said detecting.

Claim 44 (new): The method of claim 26, wherein said liquid comprises a water-soluble alcohol in an amount effective to preserve the sterility of said liquid toward at least one contaminant.

Claim 45 (new): The method of claim 26, wherein determining whether said target molecule has bound to said sensor molecule comprises contacting said filter with a labeled secondary sensor, and determining whether said labeled secondary sensor is associated with said filter.

Claim 46 (new): The method of claim 45, wherein said labeled secondary sensor comprises an agent selected from a chromophore, a lumiphore, a fluorophore, a chromogen, a hapten, an antigen, a radioactive isotope, a magnetic particle, a metal nanoparticle, an enzyme,

an antibody or binding portion or equivalent thereof, an aptamer, and one member of a binding pair.

Claim 47 (new): The method of claim 46, wherein said agent is an enzyme selected from alkaline phosphatase, horseradish peroxidase, β -galactosidase, glucose oxidase, a bacterial luciferase, an insect luciferase, and sea pansy luciferase.

Claim 48 (new): The method of claim 46, wherein said fluorophore is a semiconductor nanocrystal.

Claim 49 (new): The method of claim 46, wherein said fluorophore is a fluorescent dye.

Claim 50 (new): The method of claim 46, wherein said agent is an enzyme and a chemiluminescent substrate is used to detect the presence of said agent.